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Deputy Minister.

LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA.

BULLETIN No. 138

GROUND CINNAMON

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GROUND CINNAMON.

OTTAWA, July 16th, 1907.

W. J. GERALD, Esq.,

Deputy Minister of Inland Revenue.

SIR,—I beg to hand you herewith a report upon thirty-three samples of *Ground Cinnamon*, collected in November and December, 1906.

Cinnamon and *Cassia* are the dry barks of trees which belong to the same botanical genus, *Cinnamomum*. Cinnamon is the bark of C. Zeylanicum, chiefly grown in Ceylon and the East Indies; Cassia is the bark of C. Cassia, chiefly grown in China and India. The former bark is thinner, lighter in colour and exists (commercially) in smaller rolls than Cassia bark. It is sufficiently easy to distinguish the two articles, in the unground state; and there is a considerable difference in price between whole cinnamon and whole cassia. The botanical elements of the two are, however, practically identical; and, in the finely ground state, it becomes a difficult, if not an impossible thing, to discriminate between them. The darker colour of Cassia is almost the only distinctive character that remains.

Whether cassia is inferior to cinnamon for flavouring purposes, in cookery, is an open question. The general impression is that cinnamon is preferable. Its higher price is doubtless due to this preference. At the same time it is certain that much, if not most, of the ground cinnamon of commerce, is really ground cassia.

Several grinders distinctly label their goods with the word *Cassia*; and it is probable that the same spicemen put on the market a higher priced article under the name *Cinnamon*; but of this I have no conclusive proof. It is however quite certain that the spice in question is known to most domestic users as *Cinnamon*; while the term *Cassia* conveys a very vague meaning, or no meaning whatever. Throughout Quebec the article is known as *Canelle*, which means cinnamon as distinguished from cassia, to which belongs the term *Casse*, seldom mentioned except as a drug.

Under these circumstances, it will be seen that a discrimination between cinnamon and cassia, as spices, is difficult to maintain. It is open to question how far we may take the darker colour of cassia, as evidence of its presence. A sample of cinnamon, ground from the bark, was taken as the standard of colour; and among thirty-three samples, of spice bought as cinnamon, only two (2) were found to come up to the prepared standard. One of these was plainly labelled *Cassia* on the package. The sample in question contains no foreign starch, or other addition, which might account for its light colour; so that, unless bleaching has been resorted to, we must infer that some samples of cassia are as light in colour as normal cinnamon.

The difficulty of distinguishing between cinnamon and cassia, in the ground state, is recognized by the Committee of Standards at Washington, as shown by the following definitions, proclaimed as legal for the United States in June, 1906:

Cinnamon is the dried bark of any species of the genus *Cinnamomum*, from which the outer layers may or may not have been removed.

True Cinnamon is the dried inner bark of *Cinnamomum Zeylanicum*, Breyne.

Cassia is the dried bark of various species of *Cinnamomum*, other than *Cinnamomum Zeylanicum*, from which the outer layers may or may not have been removed.

Cassia buds are the dried, immature fruit of species of *Cinnamomum*.

Ground Cinnamon, Ground Cassia, is a powder consisting of Cinnamon, Cassia or Cassia buds, or a mixture of these spices, and contains not more than six (6) per cent of total ash, and not more than two (2) per cent of sand.

So far as admixture of Cassia is concerned, I do not think that the present state of our knowledge justifies me in pronouncing it an adulteration of the spice known as Ground Cinnamon. This aspect of the matter must be left open for the present.

With a single exception, no other foreign matters have been found; and in this sample (No. 26,045) the amount of (wheat) starch is so small, as to be negligible.

As regards ash, the limit of six (6) per cent fixed by American Standard, is exceeded in six cases. I shall, however, await further experience with cinnamon, as occurring on the Canadian market, before feeling warranted in accepting the standards quoted.

The work on this subject has been mainly done by Mr. Lemoine of this Laboratory. An explanatory note by him accompanies the Table.

I beg to recommend the publication of this report as Bulletin No. 138.

I have the honour to be, Sir,

Your obedient servant,

A. McGILL,

Acting Chief Analyst.

Record of Samples of Ground Cinnamon—Analysed by

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Quantity.	Cost.	Name and Address of Manufacturer or Funisher as given by the Vendor.
1906.			*District of Nova Scotia, R. J. Waugh, Inspector.*			
Nov. 5	Ground Cinnamon....	27205	Larder, Hubley & Co., Barrington st., Halifax.	12 oz.	30c..	A. M. Piper, Jarvis st., Toronto.
" 6	"	27212	W. H. Schwortz & Son, Halifax, N.S.	12 "	27c..	Vendors.....
			District of New Brunswick, J. C. Ferguson, Inspector.			
" 7	"	24284	Dearborn & Co., 93-95 Prince William st., St. John, N.B.	3 pkgs.	30c..	Vendors .....
" 8	"	24285	G. E. Barbour Co., Limited, 11-12 North Wharf, St. John, N.B.	3 "	30c..	" .....
			District of Quebec, E. Baland, Inspector.			
" 12	"	26040	Geo. Montreuil, 91 St. Paul.	1 lb.	40c..	Not known.....
" 12	"	26042	François Bourret, 143 St. Paul.	1 "	40c..	N. Rioux et Cie.....
" 12	"	26044	T. P. Guy, 152 St. Paul....	1 "	40c..	" " .....
" 12	"	26045	F. H. Allarie, 347 St. Paul.	1 "	40c..	Not known.....
			District of St. Hyacinthe, J. C. Rouleau, Inspector.			
" 7	"	583	Godreau & Stevens, St. Jean.	1½ lb.	50c..	Not known.....
" 9	"	584	H. F. Barlow, Magog.....	3 pkgs.	30c..	Lockerby Bros., Ltd., Montreal.
" 13	" ...	585	A. C. Trempe, Sorel....	1 lb.	40c..	Not known.....
			District of Montreal—J. J. Costigan, Inspector.			
" 2	"	31625	S. H. Ewing & Son, King st., Montreal.	1½ lbs.	15c..	Vendors .....
" 2	" ..	31628	J. J. Duffy & Co., St. Paul st., Montreal.	1½ "	10c..	" .....
Dec. 12	"	31635	Theo. Lefebvre & Co., Gosford st., Montreal.	½ "	10c..	" .....
" 12	" ...	31638	J. V. Boudrias, Notre Dame st., Montreal.	½ "	9c..	" .....
			District of Ottawa—A. E. Sanderson, Inspector.			
Nov. 13	"	29382	G. Stewart, 237 Bank st., Ottawa.	1 lb.	40c..	Corcoran & Co., Wellington St., Ottawa.
" 14	"	29388	Geo. Thomas, 63 George st., Ottawa.	1 "	30c..	Major, Ottawa.....
" 15	"	29397	A. Boivin, 80 Queen st., Ottawa.	1 "	35c..	G. J. White, Ottawa..
			District of Kingston—J. Hogan, Inspector			
" 5	" ..	31005	J. Cullen, Princess st., Kingston.	1 lb.	40c..	Not known.....
" 6	"	31014	James McCulla, Montreal st., Kingston.	1 "	50c..	Pure Gold, Toronto...
" 6	"	31016	P. A. Haffner, Montreal st., Kingston.	1 "	30c..	Robertson & Nicolle..

the Laboratory of the Inland Revenue Department.

Inspector's Report.	Results of Analysis. Ash. Soluble.	Insoluble.	Total.	Appearance under Microscope.	Remarks.
Sample taken from bulk..	1·15	1·55	2·70	No foreign tissues.	
Sample taken from box about to be shipped from factory.	0·80	2·75	3·55	" " .	
Labelled absolutely pure Cinnamon. We guarantee the contents of this package.	1·90	3·55	5·45	No foreign tissues.	
Labelled strictly pure. Acorn brand. Maritime Spice and Coffee Mills, &c.	0·5	2·85	3·35	" " .	
....	0·60	4·75	5·35	No foreign tissues.	
....	0·60	2·00	2·60	" " .	
....	0·70	2·00	2·70	" " .	
....	1·00	4·50	5·50	Contains foreign starch in small amount.	
Taken out of a 10 lb. drawer on shelf.	0·85	6·65	7·50	No foreign tissues.	Ash is too high percentage.
Box marked pure ground Cassia.	0·65	4·20	4·85	" " .	Plainly labelled as Cassia.
Taken out of a 10 lb. drawer on shelf.	1·85	5·40	7·25	" " .	Ash is too high percentage.
Taken at factory . . . stock...	0·85	6·00	6·85	No foreign tissues.	Ash percentage too high.
" " ..	0·95	3·60	4·45	" " .	
Sample collected at factory....	0·95	6·25	7·20	" " .	Ash too high.
"	0·75	5·85	6·60	" " .	
Taken from bulk	1·0	2·00	3·00	No foreign tissues.	
"	1 .	3·15	4·20	" " .	
"	1·00	3·40	4·40	" " .	
.....	0·95	5·30	6·35	No foreign tissues.	Ash too high.
.....	0·95	3·45	4·40	" " .	
.....	0·85	3·55	4·40	" " .	

Record of Samples of Ground Cinnamon—Analysed by

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Quantity.	Cost.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1906.						
			District of Toronto—T. Kidd, Acting Inspector.			
Nov. 14	"	30221	Benson Bros., Guelph, Ont.	½ lb.	25c	Todhunter & Mitchell, Toronto.
" 15	"	30220	J. F. Moorish, 237 Yonge st., Toronto.	½ "	25c	" ..
" 19	"	30232	Kidd & Co., Athlone, Adgala, Simcoe Co.	6 ozs.	15c	F. F. Dalley & Co., Hamilton.
			District of London, T. Kidd, Inspector.			
Nov. 2.	Ground Cinnamon ...	30197	Geo. H. Naiven, Windsor, Ont.	¼ lb.	30c..	Canada Spice and Grocery Co., London, Ont.
" 7.	"	30209	Cardino Bros., Seaforth, Ont.	½ "	20c..	A. M. Smith & Co, London, Ont.
" 8.	" ...	30215	Richard Smith, Seaforth, Ont.	½ "	20c..	Todhunter & Mitchell, Toronto.
			District of Manitoba, W. M. Conklin, Inspector.			
Nov. 8.	Ground Cinnamon	25905	Murdoch & Wilson, Virden	½ lb.	25c..	Not known .....
" 8.	"	25906	Wm. Muir, Brandon.....	½ "	20c..	Hamilton Coffee and Spice Co.
" 9.	"	25912	The T. A. [illegible]land Co., Portage la [illegible]rie.	½ "	20c..	Eby, Blain & Co., Toronto.
			District of Brit[illegible]h Columbia, E. B. Parkinson, Inspector.			
Nov. 9.	Ground Cinnamon ...	28186	The Empress Manufactur[illegible] Co., Ltd., Vancouver, B.C.	3 tins,	20c..	Vendors..... ....
" 10.	"	28192	H. A. Howell, Granville St., Vancouver, B.C.	¾ lb.	60c.	The Pioneer Coffee and Spice Mills, Victoria, B.C.
Nov. 12	Ground Cinnamon	28197	Hudson's Bay Co., Wholesale, Water St., Vancouver, B.C.	3 tins,	20c..	Wm. Braid & Co., Vancouver, B.C.

Note.—In examining these samples microscopically an endeavour was made to distinguish Cinnamon from Cassia by certain botanical characters supposed to be peculiar to each; but no absolutely conclusive judgment could be rendered on the subject, the aforesaid characters being of insufficient constancy.

July 13, 1907.

the Laboratory of the Inland Revenue Department—*Concluded.*

Inspector's Report.	Results of Analysis. Ash.			Appearance under Microscope.	Remarks.
	Soluble.	Insoluble.	Total.		
....	0·90	2·25	3·15	No foreign tissues.	
....	0·75	2·00	2·75	" "	
Branded pure..	0·75	3·15	3·90	" "	Plainly labelled 'Cassia.'
Branded Pure spice.....	1·00	3·15	4·15	No foreign tissues.	Plainly labelled 'Cassia.'
....	0·75	2·50	3·25	" ..	
....	0·80	2·25	3·05	" ..	
....	2·15	3·25	5·40	No foreign tissues.	
....	0·60	2·15	2·75	" ..	
....	0·85	2·65	3·50	" ..	
Purchased at the factory, Empress brand; Empress brand coffee, spices and extracts always reliable.	0·99	1·00	2·40	No foreign tissues.	
Bulk cinnamon	0·85	2·55	3·40	" ..	
Imperial brand, milled by the new process, from the finest selected stock. Packed expressly for the best family trade. Full strength, full weight and finest quality. Selected stock, put up expressly for Hudson Bay Co., Vancouver.	1·10	2·80	3·90	" ..	

As to colour, a standard was prepared from a sample of the best obtainable cinnamon bark, and the opinions expressed have reference to this, as the normal colour for cinnamon.

ALP. LEMOINE.